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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,601	04/16/2004	Axel Brintzinger	2002 P 12364 US	1197
48154 7590 03/20/2007 SLATER & MATSIL LLP 17950 PRESTON ROAD SUITE 1000 DALLAS, TX 75252			EXAMINER THAI, LUAN C	
			ART UNIT	PAPER NUMBER
			2891	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/826,601

Applicant(s)

BRINTZINGER ET AL.

Examiner

Luan Thai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 7-17, 19-21 and 23-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-17, 19-21 and 23-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 1/17/07&2/9/07.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

This Office action is responsive to the amendment filed 12/28/06.

Claims 1-4, 7-17, 19-21 and 23-27 are pending in this application.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 4, and 26, are rejected under 35 U.S.C. 102(b) as being anticipated by Hedler et al. (DE01010535A1 of record).

The figures and reference numbers referred to in this office action are used merely to indicate an example of a specific teaching and are not to be taken as limiting.

Regarding claims 1, 2, 4, and 26, Hedler et al. (see specifically figures 1-9) disclose a method of manufacturing a module, the method comprising: providing a device (3) (e.g., semiconductor chip) that includes a connection area extending over a top surface of the device, wherein the connection area comprises a compliant 3D structure (9/10/15) that includes a conductor (9) overlying a compliant base element (10) (See Figs. 3-4), the conductor (9) being integral with a redistribution layer (13) that overlies the device, applying a casting compound

(11) over the top surface of the device (see Fig. 5) and reducing a thickness of the casting compound so that the connection area protrudes through the casting compound (See Fig. 6); and after applying a casting compound, electrically coupling the connection area to a terminal (21) of a second apparatus (e.g., a circuit board 20) by soldering (22) (See Fig. 9).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 7-17, 19-21, 23-25 and 27, are rejected under 35 U.S.C. 103(a) as being unpatentable over Hedler et al. (DE01010535A1 of record).

Regarding claims 7-8, 12, 21, 23-25 and 27, although Hedler et al. disclose the method of manufacturing a semiconductor chip but fails to teach of forming a plurality of semiconductor chips from a wafer at the same time and separating the wafer into a plurality of individual chips as claimed, it would have been obvious to one of ordinary skill in the art at the time the invention to modify the process of Hedler et al. accordingly in order to reduce the manufactory cost by mass production.

Regarding claims 9-11, although Hedler et al. lack an inclusion of the use of a photolithographic process or a laser beam for separating the chips on the wafer, selecting a specific type of known available process, in a semiconductor art, for separating the wafer into a plurality of chips would have been obvious to one of ordinary skill in the art. It would have been

obvious to modify Hedler et al. accordingly in order to provide a suitable process for separating the wafer into a plurality of chips.

Regarding claim 13, although Hedler et al. lack an inclusion of the use of spraying, dispensing or printing in applying the casting compound on the device, selecting a specific type of known available process, in a semiconductor art, for forming or applying a compound on a semiconductor device would have been obvious to one of ordinary skill in the art. It would have been obvious to modify Hedler et al. accordingly in order to provide a suitable process for forming or applying a compound on a semiconductor device.

Regarding claims 14-17, although Hedler et al. lack an inclusion of the use of a silicon based material, a thermoplastic material, or an epoxy resin, in forming the casting compound, selecting a specific type of known available material, in a semiconductor art, for forming a layer on a device would have been obvious to one of ordinary skill in the art. It would have been obvious to modify Hedler et al. accordingly in order to provide a suitable material for forming the casting compound.

Regarding claims 19-20, although Hedler et al. lack an inclusion of the use of thermal removal process or etching process for reducing the thickness of the casting compound, selecting a specific type of known available process, in a semiconductor art, for reducing the thickness of a layer would have been obvious to one of ordinary skill in the art. It would have been obvious to modify Hedler et al. accordingly in order to provide a suitable process for reducing the thickness of the casting compound.

Regarding claim 3, although Hedler et al. lack an inclusion of a lead frame for the device connected to, selecting a specific type of known available carrier, such as lead frame, in a


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semiconductor art, for the device attached thereon, would have been obvious to one of ordinary skill in the art. It would have been obvious to modify Hedler et al. accordingly in order to provide a suitable carrier for the device mounted thereon.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luan Thai whose telephone number is 571-272-1935. The examiner can normally be reached on 8:00 AM - 4:30 PM, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bradley W. Baumeister can be reached on 571-272-1722. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Luan Thai

Primary Examiner

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March 15, 2007